

## Concentrated Animal Feeding Operations and Public Health

*This factsheet was developed to explain the roles of government agencies regarding CAFOs, identify potential human health concerns associated with these operations, and briefly discuss current best management practices.*

Concentrated Animal Feeding Operations (CAFOs) are agricultural meat, dairy, or egg facilities where animals are kept and raised in confined situations. Feed is brought to the animals rather than the animals grazing or otherwise seeking feed in pastures, fields, or on rangelands. CAFOs concentrate animals, feed, waste (manure and urine), and production operations on a small area of land. In 2012, the US Environmental Protection Agency (US EPA) reported that CAFOs make up approximately 15 percent of total Animals Feeding Operations in the United States.

The US EPA defines CAFOs as livestock operations where the animals are confined for at least 45 days in a 12-month period and have no grass or other vegetation present in the confinement during the normal growing season. In Wisconsin, a CAFO generally means a livestock operation with 1000 animal units. Animal units are based on the weight of the animals.

The concentrated design of CAFOs can also pose many challenges, including bulk storage and application of large volumes of animal wastes and associated nuisance odors and noise.

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### KEY MESSAGES

- The volume and concentration of animal waste produced by CAFOs requires careful planning of environmental, human health, and technological considerations.
- CAFOs are regulated by federal, state and local agencies.
- Best management practices (BMPs) are engineered or agronomic systems to effectively control, treat, or prevent pollution, nuisance, and other problems associated with CAFOs.

### CAFOs AND PUBLIC HEALTH

If not properly managed, located and monitored, CAFOs can cause problems both locally and for the surrounding community. Some concerns raised about the potential impacts of CAFOs include: changes in air quality; increased odor and noise complaints; changes in land use; groundwater and surface water quality changes; damage to local roads from increased heavy

truck traffic; and impacts on quantity and quality of nearby drinking water wells.

The most common challenge for CAFOs is related to the large volume of manure they produce. As with smaller livestock farms, manure and wastewater from CAFOs includes nitrogen, phosphorus, organic matter, sediments, pathogens, ammonia, and other materials, depending upon the waste source. However, due to the large volume of waste produced by a CAFO, special management considerations must be made for the handling, storage, and disposal of wastes in order to protect human health and the environment. Proper management of wastes can reduce the possibility that there will be negative impacts to air, water and soil quality, as well as damage to local infrastructure (roads, culverts, bridges, etc.). To manage these impacts, producers have access to ever-improving technologies including separation, digestion, injection and irrigation of manure.

In a CAFO, animal wastes are removed using any of a variety of methods and then stored prior to land spreading. Under current regulations, CAFOs must be able to store at least six months of manure and process wastewater generated. Dairy and swine operations typically store waste in holding tanks or ponds. Occasionally, the handling, storage, and transport of animal waste results in accidental spills. Spills can impact drinking water in wells or surface waters in lakes and streams. Part of the role of state and local environmental and emergency agencies is to enforce rules to prevent spills, and to respond quickly and effectively to minimize environmental damage when spills do occur.

Impacts to surface water, groundwater, or private drinking water wells are sometimes associated with the land spreading of animal waste or manure spills. State and local health agencies have a role in ensuring that citizens have clean drinking water, and in advising the public if it becomes unsafe.

## **ROLES OF AGENCIES**

CAFOs are regulated under many statutes and administrative codes, and by various state and local agencies. Listed below are some of the agencies' roles regarding CAFOs. *This is not a complete list of roles for each agency.*

### *Local and county governments*

- Establish local zoning laws
- Set and enforce local nuisance laws subject to "right to farm" protections
- Administer programs to protect public health
- Administer soil and resource management rules, subject to cost-sharing requirements

### *Department of Agriculture, Trade, and Consumer Protection (DATCP)*

- Cooperatively administer the soil and water resource management program, which

includes conservation engineering, nutrient management and Farmland Preservation

- Establish standards for local governments with ordinances that require conditional use or other permits for siting new or expanding livestock operations
- Establish standards for local governments with ordinances that require permits for manure storage construction and closure

### *Department of Natural Resources (DNR)*

- Set rules to protect groundwater and surface water near CAFOs
- Regulate storage and spreading of manure and process wastewater through the WPDES permit program
- Require nutrient management plans for CAFOs as part of the permit process

### *Department of Health Services (DHS)*

- Ensure protection of human health from harmful agents
- Investigate health impacts from CAFOs

For additional information on the roles of government agencies see:

<http://datcp.wi.gov/uploads/Environment/pdf/LawsForLivestockFacilities.pdf>

## **BEST MANAGEMENT PRACTICES**

Best management practices, or BMPs, are engineered or agronomic systems to control, treat, or prevent pollution, nuisance, and other problems associated with CAFOs. DHS does not establish appropriate BMPs, but sometimes assists other agencies that are developing BMPs.

For example, CAFOs can reduce or prevent strong odors by managing manure applications and manure storage areas. There are many technical options available. For more information, contact DATCP or your county soil and water conservation office.

There is growing use of spraying liquefied manure through irrigation lines. Currently, DNR Administrative Code (NR 214) sets a minimum 500 foot setback to dwellings, wellheads, and surface waters from manure spray irrigation systems.

A University of Wisconsin-Extension workgroup has been established to address technical and health related questions, and further develop best management practices for manure irrigation. The workgroup includes representatives from DNR, DHS, DATCP, local health departments, UW-Madison, local farmers, and other stakeholders. By summer 2015, the workgroup plans to issue a report, which will include recommendations to reduce the risk of environmental or public health impacts. Examples of appropriate manure irrigation activities may include setbacks, droplet size, weather conditions, and time of day.

### FOR MORE INFORMATION

The topic of CAFOs is much broader than can be addressed in a short fact sheet. For more information, please contact any of the agencies listed below.

#### Wisconsin Department of Health Services

Robert Thiboldeaux  
608-267-6844  
[robert.thiboldeaux@wi.gov](mailto:robert.thiboldeaux@wi.gov)  
<https://www.dhs.wisconsin.gov/>

#### Local Health Department

For a list of local health department contacts see:  
<https://www.dhs.wisconsin.gov/lh-depts/counties/index.htm>

#### Department of Natural Resources

Concentrated Animal Feeding Operations  
<http://dnr.wi.gov/topic/AgBusiness/CAFO/>  
See contacts for your area at:  
<http://dnr.wi.gov/topic/AgBusiness/CAFO/Contacts.html>

#### Department of Agriculture, Trade and Consumer Protection

Nutrient Management Program  
[http://datcp.wi.gov/Farms/Nutrient\\_Management/index.aspx](http://datcp.wi.gov/Farms/Nutrient_Management/index.aspx)  
Conservation Engineering  
[http://datcp.wi.gov/Environment/Land\\_and\\_Water/Conservation/Conservation\\_Engineering/index.aspx](http://datcp.wi.gov/Environment/Land_and_Water/Conservation/Conservation_Engineering/index.aspx)  
Livestock Facility Siting  
[http://datcp.wi.gov/Environment/Livestock\\_Siting/index.aspx](http://datcp.wi.gov/Environment/Livestock_Siting/index.aspx)  
Manure Storage Ordinances  
[http://datcp.wi.gov/Environment/Land\\_and\\_Water/Conservation/Local\\_Ordinances/](http://datcp.wi.gov/Environment/Land_and_Water/Conservation/Local_Ordinances/)

#### US EPA

Animal Feeding Operations Overview  
<http://water.epa.gov/polwaste/npdes/afo/>

#### UW Extension

Nutrient Management Team  
<http://www.uwex.edu/ces/ag/teams/nutrient/>  
Understanding Manure Irrigation  
<http://fyi.uwex.edu/manureirrigation/workgroup/>

#### Wisconsin Land and Water Conservation Association

<http://wisconsinlandwater.org/>